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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/349,575 | 07/08/1999 | RAYMOND G. GAUTHIER | 41705.P0001 | 6789 |

27717 7590 04/13/2006

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| EXAMINER |
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SAN MARTIN, EDGARDO

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| ART UNIT | PAPER NUMBER |
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2837

DATE MAILED: 04/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/349,575

Applicant(s)

GAUTHIER ET AL.

Examiner

Edgardo San Martin

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13-16, 23 and 24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-16, 23 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>3/21/01; 5/27/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 6 – 11, 13, 16, 23 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Plunkett (US 4,928,043).

With respect to Claims 1, 13, 23 and 24, Plunkett teaches a method, comprising the steps of driving a polyphase motor with a drive voltage, and sampling a back emf of a selected phase of the motor to determine positional error of a motor rotor only while a drive voltage of the selected phase is substantially zero (Col.2, Line 43 – Col.3, Line 13, and Col.4, Lines 17 - 52); and comprising the step of generating a speed control signal corresponding to a difference between a desired rotor angular velocity and a rotor speed inferred from a frequency of the drive voltage or the back emf, and varying an amplitude of the drive voltage in accordance with the speed control signal (Col.4, Line 33 – Col.5, Line 44). In particular to claim 24, Plunkett teaches an inverter (Fig.1, Item 12), a waveform generator (Fig.1, Items 14 and 24) providing a drive waveform to the inverter, wherein a frequency of the drive waveform varies in accordance with the commutation control signal, wherein the inverter provides the drive voltage at a same frequency as the drive waveform (Col.4, Lines 17 – 45).

With respect to Claims 6 and 7, Plunkett teaches the motor being a three phase brushless DC motor (Fig.1, Item 10; Col.4, Line 17+).

With respect to Claims 8 and 9, Plunkett teaches wherein the drive voltage of the selected phase passes through zero during sampling and wherein the selected drive voltage does not pass through zero during sampling (Figs.5 and 6; Col.5, Lines 6 - 56).

With respect to Claims 10 and 11, Plunkett teaches comprising the step of controlling commutation of the motor in accordance with the sampled back emf, and the step of varying a frequency of the drive voltage in accordance with the sampled back emf (Col.6, Lines 5 – 26).

With respect to Claim 16, Plunkett teaches the sampled back emf being normalized with respect to a commanded angular velocity of a motor rotor (Col.2, Line 53 – Col.3, Line 13).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2, 3, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Plunkett (US 4,928,043).

Plunkett teaches the limitations discussed in the previous rejection, but fails to disclose the drive voltage being substantially sinusoidal or trapezoidal.

The Examiner takes Official notice that the use of sinusoidal and trapezoidal voltage is well known in the art.

It would have been obvious to a person with ordinary skill in the art to use a sinusoidal or trapezoidal voltage because in addition to be well known in the art, the type of voltage to be use depend upon how simple the designer wants to keep the control system.

3. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Plunkett (US 4,928,043) in view of Jarvick (US 4,173,796).

Plunkett teaches the limitations discussed in the previous rejections, but fail to disclose the motor being a component of an implantable medical device.

On the other hand, Jarvick teaches an implantable heart assist pump comprising a motor (Abstract and Col.4, Line 57 – Col.5, Line 26).

It would have been obvious to a person with ordinary skill in the art to employ the Plunkett motor control system with the Jarvick motor because the control system would improve the efficiency and performance of the motor, improving the quality of the implantable heart assist pump.

Response to Arguments

4. Applicant's arguments filed on October 4, 2001 have been fully considered but they are not persuasive. The Examiner considers that no new issues were introduced by the filed amendment, the amendment to claims 1 and 13 merely incorporate the subject matter of cancelled claims 12 and 17, the two new claims are merely the

independent version of cancelled claims 18 and 19. For the reasons discussed above and previously discussed in the previous Office Action mailed on February 14, 2001, the claims stand rejected.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

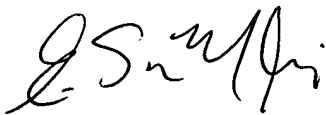
Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edgardo San Martin whose telephone number is (571) 272-2074. The examiner can normally be reached on 8:00AM - 5:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Edgardo San Martín
Patent Examiner
Art Unit 2837
Class 318
August 23, 2004